Fields of Opportunities

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR
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DEPARTMENT OF NATURAL RESOURCES
CHUCK GIPP, DIRECTOR

April 4, 2016

Mark J. Hague
Regional Administrator
Region 7, U.S. Environmental Protection Agency
11201 Renner Blvd
Lenexa, KS 66219

Re: 1-hour sulfur dioxide designations

Dear Regional Administrator Hague:

The Iowa Department of Natural Resources (DNR) respectfully submits this letter in response to designations proposed by the U.S. Environmental Protection Agency (EPA) for the 1-hour (hr) sulfur dioxide (SO_2) National Ambient Air Quality Standard (NAAQS).

After careful consideration of EPA's February 16, 2016, comments, and the completion of additional analyses to address EPA's concerns, the DNR continues to recommend that Des Moines, Wapello, and Woodbury Counties be designated attainment. Supporting documentation is provided in the following attachment.

These comments further support the State of Iowa's November 4, 2015, amended recommendation that Des Moines, Wapello, and Woodbury Counties be designated attainment.

If you require additional information, please contact Matthew Johnson at matthew.johnson@dnr.iowa.gov or 515-725-9554.

Sincerely,

Chuck Gipp

Chuck Gipp
Director, Iowa Department of Natural Resources

7900 Hickman Road, Suite 1 / Windsor Heights, Iowa 50324
515-725-9500 FAX 515-725-9501 www.IowaCleanAir.gov

Attachment

Des Moines and Wapello Counties

On December 23, 2015, the DNR submitted revised dispersion modeling results for Burlington and Ottumwa generating stations, located in Des Moines and Wapello Counties, respectively. In that updated modeling emission rates were defined using either existing federally enforceable maximum allowable emissions rates or three years of recent historical actual emissions data. The use of proposed maximum allowable emission rates was eliminated.

Those modeling results showed attainment with the 1-hr SO_2 NAAQS in both Wapello and Des Moines Counties. Additionally, the DNR is confident that the receptor grids used in those modeling analyses capture the areas of maximum impact.

- The Burlington Generating Station is situated in the Mississippi River valley. The area around the generating station consists of the flood plain and surrounding bluffs. The change in elevation between the flood plain and the highest points along the bluffs is on the order of 150-200 feet, which could have an impact on predicted concentrations. The nearest area of elevated terrain is the bluff along the western edge of the flood plain, which is located only approximately 1 km north-northwest of the facility. This area of elevated terrain is included in the current modeling domain provided to EPA.

  The next nearest area of elevated terrain is the bluff along the eastern edge of the flood plain in Illinois. This area is approximately 8 km away. Based on proximity, meteorological conditions in the area, and dispersion characteristics, the maximum concentration from the facility almost certainly occurs in the closer area of elevated terrain. For this reason the current modeling domain is sufficient to determine the magnitude of maximum concentration from this facility.

- The Ottumwa Generating Station is situated along the edge of the Des Moines River valley. The area around the generating station consists of the narrow Des Moines River valley and multiple small valley tributaries, along with the areas of higher elevation above these valleys. The elevations in the area range from approximately 640 feet above sea level in the valley to 890 feet above sea level, with the main boiler stack base elevation at approximately 680 feet above sea level. The current modeling domain provided to EPA encompasses the entire range of elevated terrain in this area. As such, there is no need to expand the receptor grid in order to encompass additional terrain features. Since the modeled concentrations are decreasing at the edge of the existing receptor grid, the current modeling domain is sufficient to determine the magnitude of maximum concentration from this facility.

  This information, in combination with the revised modeling results, demonstrates that attainment designations are appropriate for Des Moines and Wapello counties.

Woodbury County

The DNR also continues to recommend an attainment designation for Woodbury County. Although the original modeling results submitted to EPA captured the areas of maximum

impact around the George Neal facilities, the DNR has extended the modeling receptor grid to address EPA's concerns regarding elevated levels of SO_2 near the edge of the grid. The radius of the grid was doubled, from 5 km to 10 km, and also extended further to the northwest, in the vicinity of the elevated SO_2 levels. At the DNR's discretion, finer receptor grids using 50 meter spacing were embedded within areas of elevated SO_2 concentrations to enhance spatial resolution. The modeled concentrations are now clearly decreasing at the edges of the grid, as shown in Figure 1, and the maximum total concentration, as show in Table 1, demonstrates attainment with the 1-hr SO_2 NAAQS.

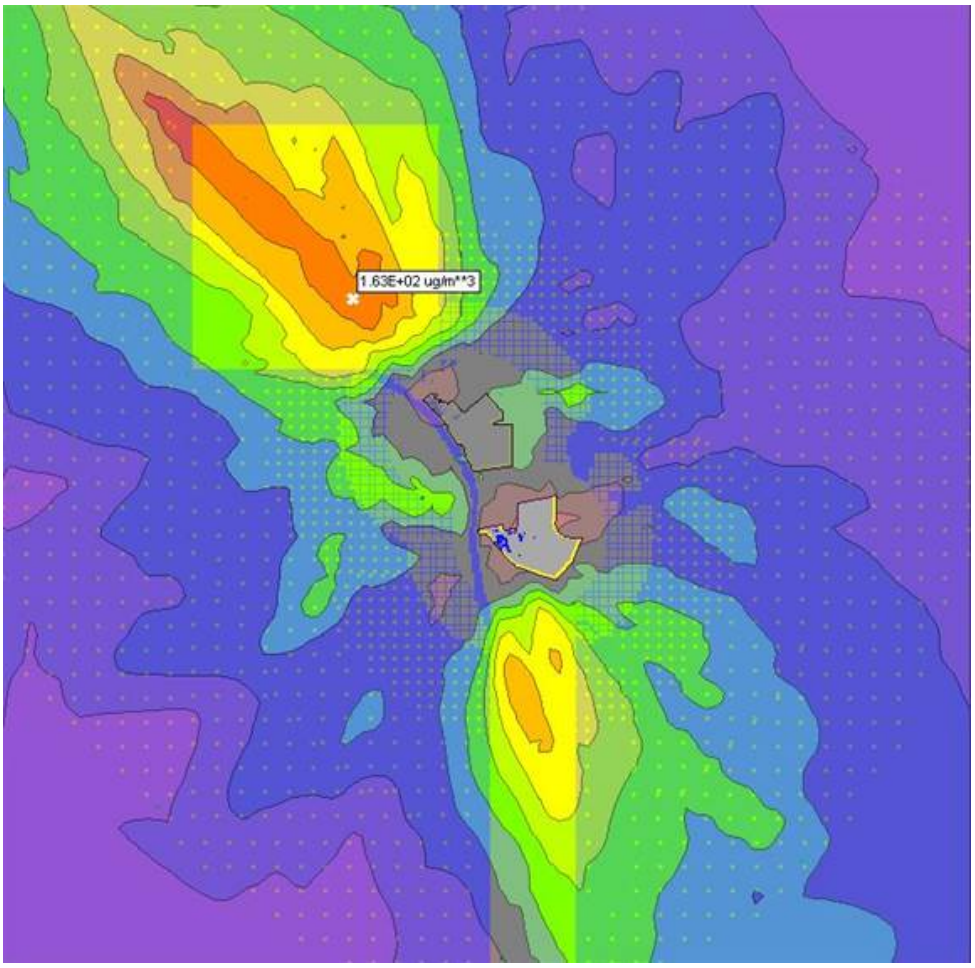

Figure 1. Maximum modeled 1-hr SO_2 design value (µg/m^3, without background) for the Woodbury County (George Neal) analysis. The receptor points are the faint dots shown behind the isopleths and the location of maximum concentration is labeled.

Table 1. Model predicted concentration (µg/m^3) for the Woodbury Co. (George Neal) analysis.

Model Design Value	Background Concentration	Total Concentration	1-Hour SO_2 NAAQS	Above NAAQS
163.46	32	195.46	196	No

These modeling results conservatively assume that George Neal North Units 1 and 2 will combust natural gas. However, George Neal North Units 1 and 2 will permanently shut down on or before April 16, 2016. Their retirement satisfies conditions of the consent decree[1] that requires these units to permanently cease burning coal on or before April 16, 2016. The process to revoke their air construction permits, which will make their shutdown federally enforceable, cannot be completed until after a 60-day public comment period. Once the air construction permits are revoked for those two sources, administrative rules federally approved in Iowa's State Implementation Plan, specifically Iowa Administrative Code (IAC) 567 - 22.1(1), will also prevent those sources from resuming operation. The DNR expects to complete the permit revocation process near EPA's July 2, 2016, designations deadline.

Concerning other sources in Woodbury County, the DNR notes a correction needed to the *Draft Technical Support Document* that accompanied EPA's February 16, 2016, letter. EPA states that the DNR did not mention Cargill Inc. – Sioux City. The DNR's technical support document did discuss Cargill Inc. – Sioux City, and concluded that emissions from this source, which are less than 1 ton per year, will not affect the attainment status of the area.

The DNR encourages EPA to designate Woodbury County attainment. If EPA instead designates Woodbury County as unclassifiable because the permanent closures of George Neal North Units 1 and 2 are not yet federally enforceable, the DNR anticipates that the State of Iowa will submit an attainment redesignation request after their closure is made federally enforceable through the revocation of their air construction permits.

[1] Consent decree between Sierra Club and MidAmerican Energy Company, United States District Court, Southern District of Iowa, Case No. 13-CV-21, filed on January 22, 2013.